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Editor—C. W. MacCHARLES Medical Historian—ROSS MITCHELL

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Medical Services for Citizens on Relief

MEETING OF MEDICAL PRACTITIONERS OF GREATER WINNIPEG

ON Wednesday, April 12th, a meeting of the medical practitioners of Greater Winnipeg was held to hear a report of the committee of the Winnipeg Medical Society and the Manitoba Medical Association which has been negotiating with the authorities with regard to medical services for citizens in receipt of relief funds. A full report of negotiations to date was rendered by the chairman of the committee, and an appreciation of possible developments in the immediate future. His report included a statement of the decisions reached at a recent meeting of the Honorary Attending Staffs of the voluntary hospitals of Greater Winnipeg.

Following this report, the meeting engaged in a general discussion. The action taken by the Honorary Attending Staffs of the hospitals was endorsed by a unanimous vote of the meeting. A resolution was also passed and signed empowering the chairman and the committee to continue the negotiations and to take whatever action they consider advisable. This authority was given because it was considered impossible to foresee the exact form that the situation might assume in the immediate future, and appropriate action might have to be taken when there was insufficient time to allow for the calling of a general meeting. It was also decided that all negotiations with the authorities should be carried out through the central committee.

There seemed to be a general feeling at the meeting that, while there was no intention of embarrassing any of the governments in any way during the present difficult times, yet the present tendency on their part to admit, and at the same time shirk, their responsibilities with regard to relief cases could no longer be allowed to continue. Special resentment was voiced against the tendency of some authorities to allege to the public that they were providing medical services for people on relief when these services were actually being provided by the free work of the medical profession. This was pointed out as being a particularly gross and striking example of a tendency in late years of public and semi-public bodies to exploit for their own ends the free services of the medical profession. —C. W. MacC.

Diphtheria Prevention Week

April 23rd *to* 29th, 1933

THIS is to be a grand co-operative effort to promote the protection of the children of Manitoba against diphtheria. Circulars have been sent to all practitioners.

The churches have expressed their full approval and have promised to announce the campaign from their pulpits.

The Winnipeg Medical Society and the Executive of the Manitoba Medical Association have promised their hearty co-operation.

The Department of Health and Public Welfare is using every effort to spread the news through the press and the bill-board, by the school and by the social organizations; it is hoped that at 12.50 or 12.55 each day during the week there will be a ten-minute address over the air from CKY.

We trust that every practitioner will afford all possible facilities for the toxoiding of the children in his area.

Please send a list of those immunized, also any suggestions for the good of the cause, or any enquiries to the Division of Disease Prevention, 41 Legislative Building, Winnipeg.

* * * *

DEATHS FROM DIPHTHERIA IN MANITOBA

In Three Year Periods

		Number of Deaths	Annual Rate per 100,000
Before immunization started:			
	1918 - 1920	369	21.5
	1921 - 1923	400	21.1
After immunization started in Winnipeg (1923):			
	1924 - 1926	286	15.1
	1927 - 1929	203	10.3
After immunization extended to Rural Manitoba (1929):			
	1930 - 1932	109	5.2

In Rural Manitoba since 1930:

There have been in unimmunized territory.....63 deaths
and in immunized territory.....18 deaths
(no deaths among immunized persons)

Pioneer Physicians of Canada

by W. A. Gardner

A SURGEON, Deschamps of Houfleur, and a surgeon apothecary, Maitre Estienne, were the first men to practice medicine in Canada. They were with Champlain in 1606 at Port Royal in Nova Scotia, afterward called Annapolis. Houfleur, near Havre, was the birth-place of Champlain. In 1610 when fighting the Iroquois Samuel de Champlain was wounded in the neck by a stone pointed arrow. A surgeon from Rouen named Bayer dressed his wounds. Dr. Louis Hébert brought his wife to Port Royal in 1613. She was the first woman to set foot on Canadian soil. His daughter's wedding at Quebec in 1618 was the first marriage consecrated in Canada. In 1629 David Kirke with an English fleet took over Quebec from Champlain and with him was a Huguenot surgeon of Dieppe, Adrien Duchesne. This surgeon received a grant of land in 1635, later acquired by Abraham Martin, hence the name *Plains of Abraham.*

Dr. Michel Sarrazin, the most famous surgeon of his time in Canada, was born in France in 1659 and graduated Doctor of Medicine from Rheims University. The sisters of L'Hôpital Général of Quebec chose him as physician in 1693. He became corresponding member to the French Academy of Sciences founded by Louis XIV in 1666. Sarrazin was made a corresponding member and Sir Isaac Newton a foreign associate member in the same year. He sent articles to the Academy on the anatomy of the beaver, a study on the American rat or Muskrat, on the lynx, the moose and the deer. He described the maple tree saying its "sap is sweet, but it is necessary at the time of drawing it off that (1) The foot of the tree be covered with snow. (2) There should be freezing the night before."

"Dr. Sarrazin had procured in Sweden a small quantity of winter wheat and barley. This was sown by him in Autumn, passed the winter without damage and produced fine wheat the next summer, with grains a little smaller than the wheat of Canada but gave a larger amount of fine flour than the summer wheat."

To us this is a very interesting experiment, carried out so long ago at Quebec. He described at great length the porcupine, discussing whether it throws its quills or not when attacked. He tried to dissect the skunk, but gave it up "because it had a dreadful smell capable of making a whole canton desert." He made a great contribution of two hundred living Canadian plants to the Jardin Royal in Paris, which remained alive for ten years, and he made the blueberry known in France.

Another prominent doctor was Jean Francois Gaulthier, who also was a corresponding member of the French Academy of Sciences. He discovered the winter green plant that was named after him *Gaultheria procumbeus.* He was a botanist, naturalist, studied the uses made by the Indians of plants and minerals and collected all the kinds of grains and roots.

In 1653 Etienne Bouchard practiced medicine in Montreal and made a contract with many of the inhabitants to look after them and their families for a dollar a year. Contract practice has a long history in Canada. An Irishman named Timothy Sullivan, later Timothe Sylvain, was granted a brevet to practice in Montreal in 1724. In 1720 he married a widow, Mme. D'Youville, a sister of the celebrated explorer, Pierre Gauthier de la Vérandrye, who discovered the Rocky Mountains, and also the mother of Mère d'Youville, the foundress of the Grey Nuns of Montreal.

During the siege of Quebec, Surgeon Robert Adair established hospitals on the Island of Orleans, and the care of the French was looked after by André Arnoux, a surgeon major in the French Army. Montcalm died at André's home on St. Louis Street, his wounds having been dressed by an apothecary, Joseph Arnoux, brother of André. "Philippe Badelard, born in Picardy, a very prominent physician, was present at the Battle of the Plains of Abraham in 1759 and was captured by a giant Highlander named Fraser. When the French retreated, Badelard also fled, but ran into Fraser at whom he presented his revolver which the Highlander brushed aside and took him prisoner. After the war Badelard practiced medicine, while Fraser opened a school. They were fast friends for the remainder of their lives."

Jean Lacoste, who practiced in Montreal, was condemned to death for forgery, but his sentence was commuted, to being stripped naked, conducted through the streets and lashed at street corners, branded on the face, and sent to France to work in a galley ship for life.

Such was the severity of the sentence for wrong-doers in those times.

"The first physicians of New France were not remarkable in their profession, but later the profession was elevated. The celebrated Michel Sarrazin reflected upon it a great lustre by his real knowledge and his scientific works."

After the American War of Independence some 35,000 United Empire Loyalists came to Canada to the banks of the St. Lawrence and the Ottawa Rivers, to New Brunswick, Nova Scotia and Ontario, and with them were many professional men.

Let us digress for a few minutes to take a glimpse at the American Revolution. At the beginning of this struggle very few were in favor of Independence, but two-thirds of the population were in favor of resisting the British methods of Government with arms. About one-third of the American Colonists were loyal almost throughout the struggle and joined the British forces independently and as Royal American Fencibles, soldiers recruited for home service only. At the end of the war those who fought and wished to remain in the Empire had a hard time. Many were banished, others had their property confiscated and sold for the American cause, they were not allowed to hold office or practice law. Most of the professional class were on the British side and many of these that migrated came to Canada in 1784, some however returned to England and others to the West Indies.

"The United Empire List was created on November 9th, 1789, when at a meeting of the Council Chambers at Quebec an order was made that the land Boards, which had been set up to distribute Crown Lands to the sons of Loyalists, register their names, to the end that their posterity may be discriminated from future settlers in the parish, registers and rolls of the militia and other public remembrancers of the Province, as proper objects, by their persevering in the fidelity and conduct so honorable to their ancestors, for distinguished benefits and privileges."

Among the physicians who came to Canada were John Prince, of Salem, Mass.; Nathaniel Perkins, who was one of the first to practise small pox innoculations in Boston in 1764; Dr. Duncan Clark, who arrived at Halifax in 1782 with the Loyalist troops who evacuated New York; John Bolman, who came from Germany with the Hessian Contingent to support the British in the Revolutionary War. Dr. James Dick settled in Queen's county after taking part in the war. At the fight at Little York he took over command as all his superior officers had been killed. There was a large number of Loyalists at Shelburne, Nova Scotia, which for a time was nearly twice as

large as Halifax. Two doctors among them were Dr. Benjamin Loring, of Boston, and William Stafford, Surgeon of the Maryland Loyalists Volunteers. Dr. Joseph Norman Bond was the first physician to use vaccination in Nova Scotia, and "the first person to be inoculated with smallpox in Nova Scotia was on May 27th, 1773. The fact is noted in the Baptismal Register of the Episcopal Church, Lunenberg."

Dr. John Caleff first went to St. John and later St. Andrews, New Brunswick. He was a member of the Boston Legislature during the war, and was one of the "seven rescinders."

"Dr. Adino Paddock was a son of Mayor Adino Paddock of Boston, well-known for the trees he planted on Tremont Street and known as the Paddock elms. After the war Paddock went to Halifax with his family, and then to England, where he studied medicine. He practiced in St. John for many years."

Dr. Ambrose Sharman was a Lieutenant in the "Royal Fencible Americans," also assistant surgeon. He too practiced in St. John.

Another doctor who came to St. John was Nathan Smith from Rhode Island, and surgeon in the First Battalion, DeLancey's Brigade at the close of the Revolution.

Eye, Ear, Nose and Throat Section of Winnipeg Medical Society

ADDRESS OF RETIRING CHAIRMAN

DR. F. A. MacNEIL

Mr. Chairman and Gentlemen:—

I WILL confess to you at the outset that I have been much perplexed in the selection of a subject. Many of you, I am sure, have found yourselves in a similar difficulty. The following resume, however, of some of the happenings in the section through the year will not, I hope, be inappropriate.

The troublesome times through which we are passing have brought the section in closer co-operation with the larger bodies of organized medicine, that is to say, the Winnipeg Medical and the Manitoba Medical Associations. Peculiarly it has been the Eye, Ear, Nose and Throat Section, through the initiative of its members, that has taken the lead in an effort to solution of the major problem, the dispensing of free services of the medical profession to the sick poor. Not less important has been the impetus given to a closer union of the whole medical profession. May I say in passing that it would be unfortunate indeed if dissention should arise in the section at this time to divert the ship from her course and render the attainment of our aims more difficult.

It was this section that six years ago initiated the move toward more efficient distribution and consolidation of free services by the medical profession, clinics, social service workers, etc., through the province. Our recommendations at that time with reference to a central bureau of investigation for people receiving free treatment, as well as other suggestions, went unheeded, and one has only to reflect for a moment on recent happenings

and the course of events since, to realize that perhaps some of the difficulties which confront us now might have, at least in part, been solved had those recommendations been acted upon at that time.

This work was again taken up by the section during the past year and it is interesting to note that the negotiations which are being carried on, for better or for worse, with the different governmental bodies are of an exactly similar nature and had their origin here.

I think that it will not be disputed that we are approaching a critical stage in the history of the relations between ourselves, that is to say, the medical profession, and hospital boards and governments. We are entering upon a chapter in these relations, the whole of which will probably be written within the next few years.

The subject is so trite and at the same time perplexing that it seems superfluous for me to dwell further on the matter. It reminds me of a story I once heard of the captain of a down-east schooner when they were beating about in a thick fog, who said, "What would our wives say if they knew where we are?" "Humph, I shouldn't mind that," replied the mate, "if we only knew where we were ourselves." Before leaving it, however, may I take this opportunity of extending our appreciation to the committee who, under the able direction of Doctor E. S. Moorhead, are working on the problems so diligently. I think, too, that our section is singularly fortunate in being represented on that committee by such able advisers as Dr. F. D. McKenty, Dr. Alex. Swan, Dr. W. E. Campbell and Dr. P. G. Bell.

Now, a word about the scientific side of the section. Doctor Leishman, in his presidential address at the close of our activities a year ago, made a plea toward improvement in our methods of procedure at our monthly meetings. He emphasized and pointed out the advantage that might result from a more systematized presentation and discussion of the cases. I may say that I am in hearty agreement with those suggestions and have felt that the members, as a whole and individually, would derive more benefit from the meetings in this way. I am not unmindful of the tendency to perhaps carry these methods and ideas to the other extreme and make the meetings too formal, but I do think that a happy medium can be struck.

The section has from its commencement devoted much of its time and attention to ophthalmological matters in which the public welfare is concerned. It has sent recommendations to Government departments and other public bodies, and has also had questions for its consideration and advice referred to it by them. Matters of this description are, in the future, likely to increase both in number and importance. We all know of the start that was made during the past year toward the control and amelioration of suffering from trachoma in those districts where this disease has prevailed for so many years. There is no doubt that some good will come from these efforts, if only from the dissemination of propaganda to the public regarding the specific and contagious character of the disease.

The damage to eyesight of discomfort caused in various ways in industrial occupations from deficient, excessive, or unsuitable illumination, has received much attention but will require further investigation and consideration.

Much has been done of late years for the care of children's eyesight during the unnatural strain to which it is exposed in the course of education; special sight saving classes have been established for those who are short-sighted or whose vision is in other ways impared.

The object of the section is the cultivation and promotion of ophthal-

mology, and oto-laryngology and I am sure that the aim of every member is to see this advancement carried on as far as his ability and opportunity will allow.

At this same table a year ago I thanked the members for electing me to the office of chairman of the section. I want to reiterate those expressions of appreciation again and especially thank you for your indulgence and co-operation through the year. My congratulations I extend to the incoming chairman, Dr. Clare, and with these congratulations the wish that you give to him the same support and co-operation you did me. I thank you.

Western Canada Medical History

by Ross Mitchell

Troops on the Red

FROM time to time in the history of the Red River Settlement, troops were brought in to maintain order or to be on hand when political developments made it likely that there might be war. The first record of the entrance of troops is that of the guard which accompanied Commissioners W. B. Coltman and Major Fletcher who were sent out in 1817 by the Imperial Government to investigate disputes between the Hudson's Bay Company and the North West Company which had culminated in the massacre at Seven Oaks on June 19, 1817. Later in the same year Lord Selkirk travelled overland to visit the settlers he had established on the banks of the Red. He had with him 200 officers and men of the disbanded MeMeurons and De Watteville regiments, chiefly of Swiss extraction, who had served in the Napoleonic wars. A number of these men remained in the country, settling along the Seine river, and it is to them that we owe the name of De Meurons Street in St. Boniface. One of them became progenitor of Louis Schmidt, who acquired notoriety as Secretary of State in the provisional government of Louis Riel in 1870. Mr. Schmidt was one of six who drew up the Bill of Rights presented by inhabitants of the Red River Settlement to the Canadian Government at Ottawa in 1870. He died at St. Louis, near Prince Albert, on June 1st, 1932.

In 1846, when there was a threat of war over the Oregon boundary between the British, represented by the Hudson's Bay Company, and American fur traders, a detachment of the 6th (Warwicks) Regiment under Lieut.-Col. Crofton was sent out from England to the little colony. Previous to their coming there had been a terrible outbreak of *bloody flux* (Cholera) with a very heavy mortality. The coming of the troops not only created in the minds of the inhabitants of the settlement a feeling of security, but, by putting money into circulation, added to their material prosperity. The troops were stationed at Lower Fort Garry. Their medical officer was Dr. Duncan, who put his musical talents to use by building the organ for the cathedral at St. Boniface where *the bells of the Roman Mission* made famous by Whittier were hung. Previous to their departure for England in March, 1848, the officers gave a ball at the Lower Fort which was attended by the youth and beauty as well as the notables of the colony. In the next year Major Caldwell brought out a body of pensioners, and with them was Dr. William Cowan.

In 1857 the Hudson's Bay Company again asked for a detachment of Her Majesty's troops to be stationed at Fort Garry. A general order of April 3rd, 1857, ordered a detachment of the Royal Canadian Rifle Regiment

to proceed from their respective stations to Montreal preparatory to their embarking for their destination. On June 23rd, 1857, the detachment marched from barracks at 5.30 a.m. to the ship *Great Britain*, which had been chartered from England. The ship arrived at York Factory, Hudson's Bay, on September 25th, and the detachment then proceeded overland to the Red River. With these troops as Staff Assistant Surgeon was Dr. Stranaghan. He remained more than a year and was relieved by Dr. Paxton, who remained until August 6th, 1861, when the Royal Canadians left Fort Garry and embarked at York Factory on August 30th, 1861. One of the officers of the original detachment was Ensign Julian Stewart Camsell, who retired from the service to enter that of the Hudson's Bay Company, in whose employ he spent thirty-two years in the MacKenzie River district where the name is commemorated by a mountain, a bend of the river and a lake. He was the father of Dr. George Camsell, formerly of Austin, and now surgeon at Stony Mountain, and of Dr. Charles Camsell, Deputy Minister of Mines at Ottawa.

In 1870 the seizure of Upper Fort Garry by armed Metis under Louis Riel and the setting up of a provisional government caused the Imperial Government and the Canadian Government to send out a Red River Expedition. Colonel Garnet Wolseley, who at that time was Deputy Quartermaster General in Canada, and stationed at Montreal, was chosen as leader of the Expedition, and to his capable and inspiring leadership was due in great measure the success of the expedition. The force consisted of 1200 fighting men, of whom two-thirds were militia. The regulars consisted of the First Battalion of the 60th Royal Rifles, detachments of the Royal Artillery and Royal Engineers, Army Service Corps, and Army Hospital Corps. There were four seven-pounder brass mountain guns, and the militia consisted of the First or Ontario Rifles with their medical officer, Dr. Alfred Codd, and the Second, or Quebec, Rifles, each of seven companies of 50 men including three officers. Colonel Wolseley had already served in Burma, India, the Crimea and China, later he was knighted and became Field Marshal. While the expedition was not called upon to do any fighting after its arrival at the Red River Settlement, it had already encountered and overcome tremendous obstacles on their journey of 1200 miles. From Toronto to Collingwood, 94 miles, the force travelled by railway, steamers conveyed the troops over the 534 miles from Collingwood to Thunder Bay, the next 50 miles was by land transport to Lake Shebandowan, and this proved the most difficult and disheartening of the entire trip. From Lake Shebandowan to Fort Garry the expedition travelled by boat over the height of land to Rainy Lake, Lake of the Woods, Winnipeg River and Lake Winnipeg to Red River, which was reached in August. With the arrival of the Expedition the provisional government collapsed. Riel and Lepine fled in the greatest haste from Fort Garry, and order was once more restored.

* * * *

Sixty Years Ago—April 4, 1873

The Winnipeg General Hospital was without funds, and in view of the imminence of the usual run of typhoid fever during the coming season, a mass meeting of citizens was called in Winnipeg public school. — *Manitoba Free Press.*

* * * *

Fifty-five Years Ago—April 4, 1878

Selkirk McKay, respected pioneer resident of Kildonan, passed away; Mr. McKay had the unique experience of coming into the world during the trip of the 1814 party of Selkirk settlers from York Factory to Fort Garry.— *Manitoba Free Press.*

News Items

— of —

Department of Health and Public Welfare

Notes on Diphtheria

THE realization of Bretonneau's dream of the protection of man against the ravages of diphtheria is in the main an achievement of the rival schools of Paris and Berlin, of Pasteur and Koch: Loeffler isolated the organism, Roux and Yersin procured the toxin, Behring the antitoxin, Roux and Martin established the horse as the donor, von Behring first vaccinated man with toxin-antitoxin, and Ramon introduced anatoxin or toxoid. It would, however, seem that the credit for putting the means into practical operation belongs rather to this continent than to the older, more conservative Europe.

In England clinical studies have always proved a more ready appeal than those of the laboratory; in the spirit of Hippocrates and Sydenham the influence of soil and climate on epidemics has been an ever enthralling subject; it is little wonder that Pettenkofer's theory of the maturation in the earth of disease producing germs struck a responsive note; it encouraged the sanitary conscience lately roused by Edwin Chadwick and at least gave added support to the demand for safer drainage and purer water supply. Budd himself, the English father of the theory of contagion, spoke of the myriads of disease laden germs that rise and float in the emanations from the sewers. Even today, the first action on the occasion of a case of diphtheria is the examination of the drains.

But in France and Germany men were guided by the words of Bretonneau to seek the vehicle of infection in the matter expelled from the patient's throat and the seed in the membrane on the fauces. The deaths of medical practitioners in Paris following the direct reception into their mouths of membrane coughed out by patients had borne regrettable testimony to the truth of this teaching.

Attempts to reproduce the disease by inoculation had been made by Bretonneau on dogs, and by Trousseau on his own arm, but without success. Not till 1871 was disease transmitted through a series of animals and then by Oertel in Germany.

The search for the curative agent was first made in the light of the teaching that germs are but phases in the life cycle of certain fungi: thus Klebs first demonstrated a *Microsporon diphtheriae* of which the rods and cocci seen in the membrane were thought to represent different stages in development. A few years later (in 1883) he corrected his earlier view and described a "spore-bearing bacillus," which seems to have been identical with that isolated a year later by Loeffler.

Friedrich Loeffler had the inestimable advantage of working in the new Imperial Health Bureau at Berlin side by side with the master, Robert Koch. From him he learned the scientific method of the study of pure cultures after isolation of the micro-organism on solid media, and the application of rigid logic in the avaluation of his findings. These are the characteristics by which Loeffler's paper in the second volume of the *Mittheilungen aus dem kaiserlichen Gesundheitsamte* ranks high among the classics of medical science.

In the membrane recovered from the throats of diphtheritic patients and prepared with a specially modified methylene blue stain, he found a congeries of various bacteria: in some cases a streptococcus, which he identified with the secondary invader in other diseases, and a bacillus, which he found more particularly in clumps in the older layers, as described by Klebs. This bacillus he isolated by culture on a medium of inspissated serum, peptone, sugar and salt, which has since remained in general use for this purpose. He described the bacili as being non-motile, straight or slightly bent, with considerable variation in length and shape, often club-shaped with granules near either end more intensely stained than the body: these granules were particularly distinct after treatment of the smear with dilute iodine and were, he suggested, the bodies described by Klebs as spores. That such was not their nature was shown by the death of the germs when exposed for half an hour to a temperature of 60°C. He inoculated numerous animals with suspensions of his culture, and found rats and mice alone unaffected. Guinea-pigs were especially susceptible: though the lesions were not identical with those found in man, yet were they characteristic for their species, being marked by internal hæmorrhages, with congestion of the adrenals and exudate into the pleura. In animals, as in humans who came to autopsy he failed to find the organism outside the initial lesion. He therefore concluded that the general symptoms of disease were due to the action of a toxin elaborated by the bacilli, as had been demonstrated for chicken cholera by Pasteur.

Despite his persistent energy and the skill with which he unravelled his problems, Loeffler failed to reach a definite conclusion, for in certain cases of undoubted diphtheria he failed to find the germ in the membrane, and in one healthy throat he found bacteria indistinguishable, under the microscope, in culture or in virulence to the guinea pig, from those found in typical membranes. Indeed, it was not until the succession of papers published in 1888-1890 by Roux and Yersin of the Pasteur Institute that the Klebs-Loeffler bacillus was firmly established as the infective agent in diphtheria.

Emil Roux, the right hand pupil and assistant of Pasteur, "with no ambition for distinction or degrees, working incessantly for sheer love of science," died but the other day, beloved and regretted. His merits in the fight against diphtheria, both in his own achievements and in his encouragement of others, have been universally acknowledged: to him was dedicated the monograph published by the Medical Research Council in 1923. Yersin, the ascetic, devoted his later labours to the conquest of plague.

It was in their third paper that Roux and Yersin urged what had been suggested already by Klebs and Loeffler, that the detection of the bacillus in smears or cultures would prove of immense value in the diagnosis and control of diphtheria. This led to the introduction of the bacteriological investigation of suspected cases into the hospital service of Paris and London, and to the still wider employment of the idea in New York, then beginning to take a lead in public health administration. Here under the Health Department was established a special service for the assistance in the diagnosis, control and study of diphtheria. It is particularly significant that the Inspector of Diphtheria was Dr. William H. Park. Culture outfits, each consisting of a box containing a tube of Loeffler's serum medium and a sterilized swab in a test tube, with detailed instructions, were distributed to forty stations, mainly drug stores, where they could be obtained free of charge by practicing physicians. Through the same stations those used were collected each day for delivery to the laboratory: over five thousand swabs were examined in the year 1893-1894. As to the value of the scheme, not

only did it reveal that many cases of sore throat without membrane were due to the invasion of Lœffler's bacillus, but it quickly led to the establishment or confirmation of points that have since remained guiding lights in the control of the disease.

The bacteriological examination was not only made for the confirmation of the diagnosis, but also became the determining factor in the release from isolation. It was found that in the majority of cases the bacilli disappeared from the throat within a week of the complete disappearance of the membrane, but in some cases they persisted much longer and in one, virulent germs were found after seven weeks.

The importance of the test for virulence by the injection of guinea pigs was recognized, for in some cases it was found that the virulent germs had been replaced in the throat by non-virulent. A clear distinction was made between the germs which resembled Loeffler's in all but pathogeninity, and the pseudo-diphtheria bacilli, or diphtheroids, which were found to be shorter and thicker and more uniform in size and staining, to produce no acid in broth culture and to grow luxuriantly on agar. The former, Park regarded, as is still the usual practice, as avirulent strains of the diphtheria bacillus; while he placed the pseudo-diphtheria bacilli in a separate class or species. The differentiation of diphtheroids by sugar fermentation tests was introduced in 1896. As he also found the avirulent diphtheria bacilli in association with virulent forms during the disease, he was saved from the conclusion that the avirulent germs found in the throats of convalescents had developed from virulent strains through prolonged habitation of the throat.

Stress was laid upon the danger of dissemination of the bacilli not only from actual cases and from recovered cases, but also from contacts and those who have associated with contacts, since virulent diphtheria bacilli were found in the healthy throats of persons who did not develop the disease. Amongst the children of families where were improperly isolated cases, fifty per cent. were found to be harbouring the germs, forty per cent. developing the disease later; amongst children of families where cases had been isolated the germs were found in ten per cent. In an asylum where from time to time diphtheria had occurred Loeffler's bacilli were cultured from the throats of five children. As a primary step Park urged the quarantine of the healthy members of those households in which there were cases of diphtheria without efficient isolation.

The presence of bacilli in the throat without consequent symptoms or lesions was not attributed to any specific immunity of the host. Rather was it considered that the germs must find susceptibility to their pathogenic action in order to cause diphtheria: the factors other than age that determine this were held to be the presence of throat affections and the association of other micro-organisms, the degree of virulence of the invading bacillus and the number of the bacilli received.

Fifteen cases of fibrinous rhinitis of the usual benign type were examined, and in all of these diphtheria germs were found; though pathogenic to guinea pigs, the virulence was less than usual. In one instance, however, a child with only a slight nasal discharge in which Loeffler's bacilli were found had given rise to diphtheria in four children, of whom two died.

As to the occurrence and survival of the bacillus outside the body, Park was able to grow the germ from various articles in the ward or sick room, and also from the dress of the nurses. He traced one group of cases to a candy store kept by a family in which there was a case of diphtheria; he determined the presence of the living bacilli in dried membrane after seven-

teen weeks and in blood serum cultures after seven months. On this point it may be added that in 1923 Dudley cultivated diphtheria germs from penholders that had been sucked by carriers two weeks previously.

The reports of Klein and others of the transmission of the disease from cows, cats and other animals were met with scepticism. They seem to have been due to insufficient regard for the differentiation between diphtheroids and diphtheria bacilli. No doubt was entertained as to the possibility of milk being a vehicle of infection, but through human contamination. There is little doubt that where virulent germs have been found on scabby udders they have been secondary invaders introduced from the milker's hands. In this connection may be cited an epidemic occurring in 1920: Thirty-two cases occurred on a certain milk route, and on investigation of the farm it was found that the girl who milked the cows had cutaneous diphtheria of a finger; this was attended to and the epidemic ceased. Fourteen days later fourteen other cases developed: diphtheria germs were now found in the sore on the teat of one cow, and also on the palm of the farmer who had assumed the milking. It seems probable that the girl had first infected both the milk and the cow, and that the cow had then infected the farmer and the milk again.

In two cases Park found diphtheria bacilli in wounds of the finger received by physicians while attending children and in several cases in ulcerated surfaces of the skin, thus recalling Trousseau's condemnation of the use of blisters on account of the frequent diphtheritic infection of the denuded surface.

This record of Park's early work was reported by Dr. D. H. Welch to the 8th International Congress of Hygiene and Demography at Budapest; antitoxin had not yet been introduced into America, but in Paris and Berlin it had already passed its experimental stage and at the same congress Roux delivered his historic address which established the place of the new treatment. From February 1st to July 24th the antitoxin had been given at the Children's Hospital to 448 children, of whom 109 had died, with a case mortality of 24.5 per cent., as contrasted with one of 51.7 per cent. for the past four years. During the same six months 520 children had been admitted to the Trousseau Hospital with diphtheria and had not received antitoxin: of these 316 had died, making a case mortality of 60 per cent. When the antitoxin was given early, the response was found to be quick, the membrane disappeared rapidly, and the complications were few. In laryngeal diphtheria there was no longer necessity for long retention of the tube and intubation could often replace the operation of tracheotomy. The association of streptococcal infection was the gravest complication and where this existed, the antitoxin had less influence. In the hospital isolation was impossible and bronchopneumonia rife; till this was remedied Roux realized that the benefits of the serum were seriously hampered. He concludes: "Malgré tout, le serum anti-diphthérique a abaissé la mortalité dans des proportions inconnues et il faut rendre hommage à la belle découverte de M. Behring qui, dans l'avenir, nous donnera mieux encore." —N. R. R.

* * * *

COMMUNICABLE DISEASES REPORTED

Urban and Rural - March, 1933

Occurring in the Municipalities of:—

Whooping Cough: TOTAL 163—Winnipeg 125, Kildonan Old 5, Kildonan West 5, Minitonas 3, Brandon 2, Kildonan East 2, St. Boniface 2, (January and February late reports: Charleswood 17, Kildonan West 1, Unorganized 1).

Mumps: TOTAL 163—Winnipeg 50, St. Boniface 47, St. Vital 38, Woodlands 5, Kildonan East 1, (January and February late reports: St. Boniface 15, Kildonan East 4, St. Vital 3).

Chickenpox: TOTAL 146 — Winnipeg 71, St. Boniface 12, MacDonald 6, St. Vital 6, Brandon 3, Kildonan West 2, Souris 2, Carman 1, Emerson 1, Gilbert Plains Village 1, Hamiota R. 1, Hamiota Village 1, St. James 1, Woodlands 1, (January and February late reports: Woodworth 7, Stanley 6, Assiniboia 6, St. Boniface 5, Brenda 3, Swan River Town 2, Minnedosa 1, Gilbert Plains Village 1, Kildonan West 1, Napinka 1, Portage City 1, Shell River 1, Winkler 1, Woodlands 1).

Influenza: TOTAL 113—Winnipeg 5, Brandon 5, Gilbert Plains V. 1, (January and February late reports: Hamiota R. 75, St. Paul West 4, Kildonan East 2, Rockwood 2, St. Andrews 2, Unorganized 2, Argyle 1, Boulton 1, Brenda 1, Dauphin T. 1, Roblin R. 1, Rossburn V. 1, Shoal Lake 1, Springfield 1, Stanley 1, Ste. Anne 1, St. Boniface 1, St. James 1, Thompson 1, Westbourne 1, Portage C. 1).

Scarlet Fever: TOTAL 100—Winnipeg 29, Emerson 11, Ritchot 8, Franklin 7, Morris T. 5, St. Boniface 5, St. Vital 5, Tache 4, Unorganized 4, Portage C. 3, Carman 1, Fort Garry 1, Gimli 1, Portage R. 1, Selkirk 1, Sprague 1, St. Clements 1, St. James 1 (January and February late reports: Unorganized 2, Argyle 2, St. Boniface 1, Whitemouth 1, Woodlands 1, Ellice 1, Fort Garry 1, Portage C. 1, Stonewall 1).

Tuberculosis: TOTAL 39—Winnipeg 16, St. Andrews 2, St. Boniface 2, Unorganized 2, Argyle 1, Brandon 1, Cameron 1, Chatfield 1, Ethelbert 1, Fort Garry 1, East Kildonan 1, West Kildonan 1, McCreary 1, North Norfolk 1, Rosedale 1, Selkirk 1, Ste. Anne 1, St. James 1, St. Laurent 1, The Pas 1, Winnipegosis 1.

Diphtheria: TOTAL 27—Winnipeg 16, Unorganized 3, Grey 1, Old Kildonan 1, East Kildonan 1, Tuxedo 1 (January and February late reports: Siglunes 2, Unorganized 2).

Erysipelas: TOTAL 15—Brandon 6, Portage C. 2, St. James 2, Boulton 1, Kildonan East 1, Souris 1, Winnipeg 2.

Measles: TOTAL 10—Winnipeg 5, Shellmouth 2, Franklin 1, Carman 1, Winkler 1.

Typhoid Fever: TOTAL 6—Brandon 1, Shell River 1, St. Clements 1, Unorganized 1, Winnipeg 1 (January and February late reports: Carman 1).

Diphtheria Carriers: TOTAL 5—Unorganized 2, Winnipeg 2, St. James 1.

German Measles: TOTAL 2—Kildonan East 1 (late report: Brandon 1).

Cerebrospinal Meningitis: TOTAL 1—Ste. Anne 1.

Septic Sore Throat: TOTAL 1—Brandon 1.

DEATHS FROM ALL CAUSES IN MANITOBA

For Month of February, 1933

Urban—Congenital 22, Cancer 20, Pneumonia (all forms) 14, Tuberculosis 5, Influenza 4, Erysipelas 3, Puerperal 2, Infantile Paralysis 1, all other causes 127, Stillbirths 21. TOTAL 219.

Rural—Congenital 30, Pneumonia (all forms) 27, Influenza 21, Cancer 15, Tuberculosis 10, Puerperal 2, Cerebrospinal Meningitis 1, Lethargic Encephalitis 1, all other causes 114, Stillbirths 9. TOTAL 230.

Indians—Tuberculosis 16, Influenza 9, Pneumonia 7, Congenital 3, all other causes 5. TOTAL 40.

WIENER KLINISCHE WOCHENSCHRIFT

Priv. Doz. Oskar Stracker

"Zehendeformitäten" (Deformities of the toes)

Dr. Stracker discusses the different forms of toe-deformities, their etiology and their treatment. In cases of chronic inflammation of the metatarsophalangeal joint of the great toe, the author calls attention to the possibility of this condition being easily mistaken for arthritis. For its treatment he recommends massage and diathermy and internally urecidin. In acute onset, local antiphlogistic treatment with Antiphlogistine proved of great value. To lessen the pain when walking, it is recommended that two strips of wood, placed at right angles, be attached to the sole of the shoe in the area of the ball.

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Rheumatic Arthritis *Muscular Fibrositis*
Osteo-arthritis *Neuro-Fibrositis*
Focal or Infective Arthritis

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Not only does their application assist in relieving the pain, but, by causing active hyperaemia, they increase the circulation of the blood and lymph, stimulate the defensive mechanism of the body, and help to restore movement in stiffened joints and muscles.

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JOURNALS AVAILABLE

THE PRACTITIONER—February, 1933

This number is devoted entirely to "The Early Diagnosis of Malignancy" and contains articles by eminent authorities on early signs of malignancy in all parts of the body.

"The Early Diagnosis of Malignant Disease of the Skin," by J. M. H. McLeod, M.D., F.R.C.P., Consultant Physician for Skin Diseases, Charing Cross Hospital.

"The Early Diagnosis of Malignant Disease of the Tongue," by Duncan C. L. Fitzwilliams, M.D., M.Ch., F.R.C.S., Surgeon, St. Mary's Hospital.

"The Early Diagnosis of Carcinoma of the Stomach," by T. Izod Bennett, M.D., F.R.C.P., Physician, Middlesex Hospital

"The Early Diagnosis of Malignant Disease of the Throat," by Lionel Colledge, M.B., F.R.C.S., Surgeon, Ear and Throat Dept., St. George's Hospital.

"The Early Diagnosis of Malignant Disease of the Lung, Mediastinum and Pleura," by L. S. T. Burrell, M.D., F.R.C.P., Physician, Royal Free Hospital and Brampton Hospital.

"The Early Diagnosis of Malignant Disease of the Colon," by W. H. Ogilvie, F.R.C.S., Asst. Surgeon, Guy's Hospital and Hampstead General Hospital.

"The Early Diagnosis of Malignant Disease of the Rectum," by Sir Charles Gordon-Watson, K.B.E., F.R.C.S., Surgeon, St. Bartholomew's Hospital, Consulting Surgeon, St. Mark's Hospital.

"The Early Diagnosis of Cancer of the Breast," by Geoffrey Keynes, M.D., F.R.C.S., Asst. Surgeon, St. Bartholomew's Hospital.

"The Early Diagnosis of Malignant Disease of the Uterus," by W. Fletcher Shaw, M.D., F.C.O.G., Professor of Clinical Obstetrics and Gynæcology, Manchester University.

"The Early Diagnosis of Malignant Disease of Bone," by E. P. Brockman, F.R.C.S., Orthopædic Surgeon, Westminster Hospital and Royal National Orthopædic Hospital.

"The Early Diagnosis of Malignant Disease of the Bladder," by Alex. E. Roche, F.R.C.S., Asst. Genito-Urinary Surgeon, West London Hospital.

"The Early Diagnosis of Malignant Disease of the Prostate," by H. P. Winsbury-White, F.R.C.S., Surgeon, St. Paul's Hospital for Genito-Urinary Disease.

"The Early Diagnosis of Malignant Disease of the Testicle," by C. Hope Carlton, F.R.C.S., Surgeon, Seaman's Hospital, Royal Albert Dock.

THE CLINICAL JOURNAL—March, 1933

"The Treatment of Acute Appendicitis," by H. H. Rayner, F.R.C.S., Surgeon, Royal Infirmary, Manchester.

—This article deals with the appropriate treatment for the different types of appendicitis and their complications.

"Pregnancy in Association with Tumors," by Frederick Roques, F.R.C.S., M.C.O.G., Asst. Gynæcological and Obstetric Surgeon, Middlesex Hospital.

—A useful lecture on the diagnosis and treatment advised in pregnancy associated with:
1. Fibromyomata. 2. Ovarian tumors. 3. Malignant tumors of the uterus.

"Acute Intestinal Obstruction," by Blacow Yates, F.R.C.S., Hon. Asst. Surgeon, Royal Hospital, Sheffield.

—An excellent article on the diagnosis of the various forms of acute intestinal obstruction.

LANCET—March 4th, 1933

"Thoracic Surgery," by H. Morriston Davies, F.R.C.S., Consulting Surgeon, University College Hospital.

—This is the first "Hume" lecture for 1933. The second appears in the "Lancet." March 11, 1933. These lectures cover very thoroughly, the various chest conditions which may be treated by surgery, and discuss the relative merits of the possible procedures.

THE PRACTITIONER—March, 1933

This number is devoted to the subject of "Emergencies in General Practice" and contains a large number of articles, short and concise but comprehensive. This will be found very useful to anyone in any branch of medicine. The titles of the articles speak for themselves.

"The Emergency Treatment of some Prevalent Types of Acute Poisoning," by Sir William Wilcox, K.C.I.E., F.R.C.P., Physician, St. Mary's Hospital, London.

"The Treatment of Acute Cardiac Failure," by Carey F. Coombes, F.R.C.P., Physician, General Hospital, Bristol.

"The Acute Abdomen," by W. H. C. Romanis, F.R.C.S., Surgeon, St. Thomas's Hospital, London.

"Operations in Private Houses," by John H. Watson, F.R.C.S., Surgeon, Victoria Hospital, Burnley.

"Coma," by John Henderson, F.R.F.P.S. (Glasgow), Professor of Medicine, St. Mungo's College, Glasgow.

"Convulsions," by Charles Newman, F.R.C.P., Junior Physician, King's College Hospital.

"Acute Vomiting and Diarrhœa in Children," by Alan Moncrieff, M.R.C.P., Physician for Diseases of Children, Bolingbroke Hospital.

"Acute Retention of Urine and its Treatment," by J. Johnston Abraham, F.R.C.S., Surgeon, London Lock Hospitals.

"The Treatment of Spinal Injuries," by Geoffrey Jefferson, F.R.C.S., Hon. Surgeon, Salford Royal Hospital, Hon. Neurological Surgeon, Manchester Royal Infirmary.

"Surgical Emergencies of the Kidneys," by Hamilton Bailey, F.R.C.S., Surgeon, Royal Northern Hospital.

"Common Gynæcological Emergencies," by Wilfred Shaw, F.R.C.S., F.C.O.G., Asst. Physician Accoucheur, St. Bartholomew's Hospital.

"Acute Laryngeal Obstruction," by Edward Davis, F.R.C.S., Surgeon, Ear, Nose and Throat Dept., Charing Cross Hospital.

"The Foreign Body in the Food or Air Passage," by D. A. Crow, Otolaryngologist, Royal Sussex County Hospital, Brighton.

"Injuries of the Eye," by H. B. Stallard, F.R.C.S., Pathologist, Moorfield's Eye Hospital, Chief Asst. Ophthalmic Dept., St. Bartholomew's Hospital.

"A Simple Precise Technique for Blood Transfusion," by Harold Dodd, Hon. Surgeon, King George Hospital, Ilford.

THE CANADIAN MEDICAL ASSN. JOURNAL

—January, 1933

"Diseases of the Duodenum and their Treatment," by Donald C. Balfour, M.D., Rochester, Minn.

—A lecture given before the Canadian Medical Association, Toronto, 1932, containing a useful summary of duodenal diseases.

"The Prognosis in Cardiac Disorders," by Robert Dawson Rudolf, M.D., F.R.C.P. Toronto.

"The Occipito-Posterior," by J. D. McQueen, Winnipeg.

—An exceedingly helpful lecture on this important condition, with a discussion of various methods of treatment, and a summary of a large number of case reports.

"Case Reports Illustrating Observations in the Treatment of Hyperemesis Gravidarum," by John Mann, M.D., C.M., Toronto.

THE AMERICAN JOURNAL of MEDICAL SCIENCES

—March, 1933

"The Evolution of Tuberculosis in the Human Lung," by Chester A. Stewart, M.D., Associate Professor of Pediatrics, University of Minnesota, Minneapolis.

—A valuable discussion of the subject, with special reference to the distinction between the adult and childhood types of the disease.

"The Differential Diagnosis of Jaundice," by Charles A. Flood, David Seegal, Benjamin Spock and Robert F. Loe, Presbyterian Hospital, New York.

—A study of 235 cases of non-haemolytic jaundice due to carcinoma, calculus in common bile duct and liver degeneration.

Clinical Meetings

At Brandon General Hospital—

2nd Wednesday at 12.30 p.m.

At Brandon Hospital for Mental Diseases—

Last Thursday. Supper at 6.30 p.m.
Clinical Session at 7.30 p.m.

At Children's Hospital—

1st Wednesday.
Luncheon at 12.30 noon.
Ward Rounds 11.30 a.m. each Thursday.

At Grace Hospital—

3rd Tuesday.
Luncheon at 12.30 p.m.
Discussion of Obstetrical Cases will form a large part of the clinical hour.

At Misericordia Hospital—

2nd Tuesday at 12.30 p.m.

At St. Boniface Hospital—

2nd and 4th Thursdays.
Luncheon at 12.30. Meeting at 1.00 p.m.
Ward Rounds 11.00 a.m. each Tuesday.

At St. Joseph's Hospital—

4th Tuesday.
Luncheon at 12.30. Clinical Session 1.00 to 2.00 p.m.

At Victoria Hospital—

4th Friday.
Luncheon at 12.00. Meeting at 1.00 p.m.

At Winnipeg General Hospital—

1st and 3rd Thursdays.
Luncheon at 12.30. Clinical Session 1.00 to 2.00 p.m.
Ward Rounds 10.00 a.m. each Thursday.
Pathological Conference at Medical College at 9.00 a.m. Saturday during college term.

Winnipeg Medical Society—

3rd Friday, Medical College, at 8.15 p.m.
Session: September to May.

Eye, Ear, Nose and Throat Section—

1st Monday at 8.15 p.m., at 101 Medical Arts Building.

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Viosterol

USE OF VIOSTEROL DURING PREGNANCY

To the Editor:—Please advise me whether administration of irradiated ergosterol to pregnant women could cause a premature calcification of the fetal head, resulting in dystocia, with possibly damage later to the child.

M.D., Waco, Texas.

J.A.M.A., Dec. 19, 1931, p. 1914

ANSWER.—There is no danger to mother or child from therapeutic doses of viosterol (irradiated ergosterol) given during pregnancy. In fact, such medication probably would be of advantage, owing to the excessive drain of calcium and phosphorus that takes place during this period. This medication is especially indicated in cases in which the intake of calcium compounds has been insufficient.

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